

Total No. of Questions : 12]

SEAT No. :

**P2219**

[Total No. of Pages : 3

**[5254]-552**

**B.E. (Mechanical Sandwich Engg.) (Semester -I)**

**POWER PLANT ENGINEERING**

**(2012 Pattern)**

*Time : 3 Hours]*

*[Max. Marks : 100*

*Instructions to the candidates:*

- 1) *Answer any three questions from section I and any three questions from section II.*
- 2) *Answers to the two sections should be written in separate answer-books.*
- 3) *Figures to the right indicate full marks.*
- 4) *Assume suitable data, if necessary.*
- 5) *Use of scientific calculator, steam table, Mollier charts is allowed.*

**SECTION - I**

- Q1)** a) Write the classification of fuels? Explain in brief about Higher calorific value and Lower calorific Value. [8]
- b) Explain Rankine cycle with P-v and T-s diagram. [8]

OR

- Q2)** a) Write the complete combustion equation for Octane ( $C_8H_{18}$ ). Define the following terms: [8]
- i) Stoichiometric air fuel ratio
  - ii) Equivalence ratio
  - iii) Actual air fuel ratio
- b) Compare Pulverized bed combustion and Fluidized bed combustion systems along with their neat sketches. [8]

**P.T.O**

- Q3)** a) Explain with neat sketch of Cochran Boiler. [8]  
b) Write a short note on "Coal Handling Systems". [8]

OR

- Q4)** a) Discuss about the Boiler Mountings and accessories. [8]  
b) Explain with neat sketch Natural Draught. [8]

- Q5)** a) Explain site selection for hydro electric power plant. [8]  
b) Explain with neat sketch of pelton wheel turbine. [7]  
c) Write any three hydro power plants in India. [3]

OR

- Q6)** a) Write short note on  
i) Dams and Penstocks [8]  
ii) Hydrograph [7]  
iii) Advantages of Hydro power plant [3]

### SECTION - II

- Q7)** a) Explain with neat sketch working of Nuclear power plant? [8]  
b) List out any three Nuclear power plant in India. [4]  
c) What are the different types Nuclear wastes? [4]

OR

- Q8)** a) Draw the General layout of the Diesel Power plant showing all systems. [8]  
b) Explain the components of the Nuclear reactor. [8]

- Q9) a)** Differentiate between open loop and closed loop gas turbine. [8]
- b) Explain with neat sketch closed cycle MHD with liquid metal. [8]

OR

- Q10)a)** Write a short note on (any two)
- i) Biomass power plant [8]
- ii) Wind power station [8]
- iii) Solar power plant [8]
- Q11)a)** Explain the terms: load factor, Reserve factor, plant use factor and capacity factor. [6]
- b) Explain brief about selection type of generation. [6]
- c) Explain the requirements of peak load plants. [6]

OR

- Q12)a)** Write short note on
- i) Incremental fuel rate curves [6]
- ii) Incremental fuel cost curve [6]
- iii) Load allocation among various generators [6]

